Remarks:

Claims 7-17 are now pending in this application. Applicants have presented new claim 17 and amended claim 1 to clarify the present invention. Applicants respectfully request favorable reconsideration of this application.

Applicants have amended claim 9 to address the rejection under 35 U.S.C. § 112, second paragraph. Claim 9 complies with 35 U.S.C. § 112, second paragraph and applicants respectfully request withdrawal of this rejection.

The present invention, as recited in newly amended independent claim 7, provides a method for simulating a missile with a simulator during testing of an aircraft weapon system. The method includes:

a) generating a target seeker command position operative to command a target seeker of a real missile to adopt a predetermined position;

b) generating a target seeker actual position;

c) generating a trouble signal by determining a difference between the target seeker command position and the target seeker actual position;

d) determining an error in amplitude and angle of a vector that specifies a direction to a target;

e) generating based upon the error in amplitude and angle of the vector an actual value signal adapted to the weapons system;

f) transmitting the actual value to the weapons system; and

g) repeating steps c-f.

As recited in newly amended independent claim 7, provides a method for simulating an actual missile with a missile simulator during testing of an aircraft system. The aircraft system includes a weapons system. The actual missile is controlled from the weapons system by an error signal in a control loop by the error signal positioning a target seeker in the missile and through the sending back of the a position of the target seeker to the weapons system via an actual value signal. The method includes:

a) generating with the weapons system at least one signal operative to command a target seeker of a real missile to adopt a predetermined position;

b) with a missile simulator measuring an error signal in a control loop, generating an actual value for the position of the target seeker, and sending an actual value to the weapons system;

c) calculating a new error signal for the control loop;

d) repeating steps b and c.

The Examiner rejected claims 7-14 under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 4,215,347 to Jarrell et al. in view of Anderson. The Examiner rejected claims 15 and 16 under 35 U.S.C. 103(a) as being unpatentable over Jarrell et al. in view of Anderson and further in view of Phillips.

Jarrell et al. does not suggest the present invention since, among other things, Jarrell does not suggest a method for simulating an aircraft missile during testing of an aircraft system that

includes a weapon system for controlling the missile. Rather, Jarrell et al. suggests a system for simulating an enemy target seeker, where difference signals are generated to redirect the orientation of an antenna carried by a drone missile.

Additionally, Jarrell et al. suggests utilizing a control loop in the system in order to adjust an antenna on a drone missile. An error/trouble signal is generated in the system. This signal is used to redirect the orientation of an antenna carried by the drone missile so that its transmission is directed toward a ground controlled signal source. The transmission from the drone missile simulates enemy signals.

Jarrell et al. basically discloses an ordinary control loop with feedback of an error/trouble signal. To use a control system with feedback is a well-known technique from many areas. However, there is no indication in Jarrell et al. that would suggest to a person skilled in the art that feedback of an error/trouble signal from a target seeker to a weapon system would be suitable for simulating an aircraft missile during testing of the aircraft weapon system.

Combining Jarrell et al. and Anderson does not suggest the present invention since, among other things, Anderson does not overcome the above-described deficiencies of Jarrell. et al. Along these lines, Anderson does not suggest a method for simulating an aircraft missile during testing of an aircraft system that includes a weapon system for controlling the missile.

Anderson does not suggest the present invention since, among other things, Anderson does not suggest a method for simulating an aircraft missile during testing of an aircraft system.

Rather, Anderson suggests a method of performing missile software simulation validation. That is, Anderson suggests assessing the performance capabilities of a simulator.

Anderson suggests validation of missile software simulation. Along these lines, Anderson suggests guidelines to a simulator developer to describe how testing may be accomplished and what data that is required for each test. Additionally, Anderson suggests how each subsystem in a missile software simulator may be tested through application of a control input to the subsystem followed by determination of the dynamic response characteristics.

While Anderson may suggest simulation of a missile, Anderson does not suggest simulation of a missile during testing of an aircraft system. On the other hand, the present invention does suggest a method for simulating an actual missile during testing of an aircraft system wherein the aircraft system includes a weapon system that generates a signal intended to command the target seeker of a real missile to adopt a predetermined position.

It appears as if the combination of Jarrell et al. and Anderson is cited to suggest that any type of method or device for simulating an missile would be considered obvious from the mere fact that there are other types of systems for simulating missiles available in combination with the fact that control loops with feedback of error/trouble signals is well known technique. This, of course, is not true. As pointed out above, there are elements of the present invention that neither Jarrell et al. nor Anderson suggests. Therefore, the combination does not suggest these elements and the present invention is not obvious in view of the combination.

Combining Jarrell et al. and Anderson with Phillips does not suggest the present invention since, among other things, Phillips does not overcome the above-described deficiencies of Jarrell. et al. and Anderson Along these lines, Phillips does not suggest a method for simulating an aircraft missile during testing of an aircraft system that includes a weapon system for controlling the missile. The Examiner only cites Phillips as suggesting a feedback system that includes time discrete signals. Simply suggesting time discrete signals does not suggest the other aspects of simulating an actual missile according to the present invention recited in independent claims 7 and 17. Therefore, the combination of Jarrell et al., Anderson and Phillips would not suggest the present invention.

In view of the above, the references relied upon in the office action, whether considered alone or in combination, do not suggest patentable features of the present invention. Therefore, the references relied upon in the office action, whether considered alone or in combination, do not make the present invention obvious. Accordingly, Applicants respectfully request withdrawal of the rejections based upon the cited references.

In conclusion, Applicants respectfully request favorable reconsideration of this case and early issuance of the Notice of Allowance.

If an interview would facilitate the prosecution of this case, Applicants urge the Examiner to contact the undersigned at the telephone number listed below.

The undersigned authorizes the Commissioner to charge insufficient fees and credit

overpayment associated with this communication to Deposit Account No. 19-5127, 19390.0003.

Respectfully submitted,

Date: 7-15-03

Eric J. Franklin, Reg. No. 37,134
Attorney for Applicant
Swidler Berlin Shereff Friedman, LLP
3000 K Street, NW, Suite 300
Washington, DC 20007
Telephone: 202-424-7500